

# **Bibliography for Environmental Assessments Associated with Port Developments at Fraser River Delta and Prince Rupert Harbour, British Columbia**

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**BIBLIOGRAPHY FOR ENVIRONMENTAL ASSESSMENTS  
ASSOCIATED WITH PORT DEVELOPMENTS AT FRASER RIVER  
DELTA AND PRINCE RUPERT HARBOUR,  
BRITISH COLUMBIA**

by

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## ABSTRACT

Thompson, W.J., Sutherland, T.F., Cook, N.A., and Macdonald, J.S. 2009. Bibliography for environmental assessments associated with port developments at Fraser River Delta and Prince Rupert Harbour, British Columbia. Can. Tech. Rep. Fish. Aquat. Sci. 2857: v + 216p.

Major port development projects are currently being considered along British Columbia's coastline. Port expansion projects require multidisciplinary reviews as part of an environmental assessment program under the Canadian Environmental Assessment Act. This report contains referenced material pertaining to ecosystems associated with two major port locations: Roberts Bank (Fraser River Delta) and Prince Rupert Harbour. These environments are areas of high ecological value and sensitivity as they represent key choke-points within salmon and shore-bird migration routes. This bibliography is a step towards a state-of-knowledge review of ecosystem processes within the areas of proposed development. The bibliography includes 1100 discrete references (961 Roberts Bank, 139 Prince Rupert). A large number of abstract and bibliographic databases were searched with specific key terms. The references are organized by location and author. Due to the large number of references for the Roberts Bank development, the references associated with this location are also organized by discipline and trophic categories: geological processes, physical oceanography, contaminants, plankton, marine fish, marine invertebrates, marine birds, marine mammals and marine vegetation. Key words are listed for each reference to facilitate search activities. This bibliography includes both peer reviewed and non peer reviewed literature.

## RÉSUMÉ

Thompson, W.J., Sutherland, T.F., Cook, N.A., and Macdonald, J.S. 2009. Bibliography for environmental assessments associated with port developments at Fraser River Delta and Prince Rupert Harbour, British Columbia. Can. Tech. Rep. Fish. Aquat. Sci. 2857: v + 216p.

D'importants projets d'aménagement portuaire sont envisagés pour la côte de la Colombie-Britannique. Les travaux de développement portant sur les équipements portuaires doivent être soumis à l'exercice d'examen multidisciplinaire prévu par la *Loi canadienne sur l'évaluation environnementale*. Le présent compte rendu contient des références sur les écosystèmes associés à deux importants sites portuaires : Roberts Bank (delta du Fraser) et Prince Rupert. Ces équipements portuaires sont implantés dans des sites de haute valeur et de grande vulnérabilité écologiques du fait de leur emplacement sur d'importants points d'étranglement des routes migratoires empruntées par le saumon et les oiseaux de rivage. La présente bibliographie contribuera à faire le bilan des connaissances sur les processus écosystémiques en jeu dans les secteurs d'aménagement portuaire proposés. La bibliographie comporte 1100 références distinctes (961 pour Roberts Bank et 139 pour Prince Rupert). Une multitude de résumés et de bases de données bibliographiques ont été scrutés avec des termes clés spécifiques. Les références sont organisées par ordre d'emplacement géographique et par ordre d'auteur. En raison du grand nombre de références obtenues pour le site de Roberts Bank, celles-ci ont également été organisées par ordre de disciplines et de catégories trophiques : processus géologiques, océanographie physique, contaminants, plancton, poissons marins, invertébrés marins, oiseaux marins, mammifères marins et végétation marine. Des mots clés sont proposés pour chaque référence afin de faciliter la recherche. Cette bibliographie comprend des documents qui ont révisés par des comités scientifiques et d'autres pas.



## INTRODUCTION

The Asia-Pacific Gateway and Corridor Initiative was developed to support trade within the Asia-Pacific Region and to prioritize systems of infrastructure (roads, rail and ports) that will connect western Canada to the economic centres of North America. This initiative includes two potential container terminal expansions within the Port of Vancouver and Prince Rupert Harbour. Port expansions by nature are located in nearshore marine habitats with potentially high ecological value and sensitivity. Projects of this scope require extensive environmental assessment reviews under the Canadian Environmental Assessment Act. Broad multidisciplinary environmental studies will be essential to determine the interactions between these projects and existing marine resources. Biophysical studies and effects assessments are compiled to investigate any possible effects of the project on the environment, and any potential means of mitigation that would reduce these effects during construction, operations and decommissioning phases of the project. These assessments will require the establishment of a detailed existing state-of-knowledge review within each location. The bibliography contained within this technical report, will assist proponents, scientists, regulators, stakeholders, and consultants in understanding regional ecosystem processes and possible interactions between the receiving environment and the projects.

## METHODS

This bibliography focuses on two areas of B.C: Roberts Bank (Fraser River Delta) and Prince Rupert Harbour. Since the proposed development associated with the Roberts Bank/Fraser River delta is located at the DeltaPort, the area of investigation for this report focuses on the Georgia Basin, bounded by Johnstone Strait to the north, west to Juan de Fuca, east to Boundary Bay and south to the international border. Research from the Fraser River was only included as far inland as the estuary/delta. Specific search terms were used to explore bibliographies and databases for site specific information. Search terms used for Vancouver Harbour area included: Roberts Bank, Sturgeon Bank, Fraser River delta, and Fraser River estuary. Due to the mobile nature of many marine resources, the larger area of Strait of Georgia was also used as a search term. This larger area was specific to mobile resources such as fish, physical and biological oceanography, marine birds and marine mammals.

The study area in the Prince Rupert Harbour project is bounded by Tuck Inlet in the north, Marcus Passage in the south, Chatham Sound in the west and De Horsey Island in the east. The Skeena River estuary was not included in the study (Williams 1991). Search terms included: Prince Rupert, Chatham Sound, Tuck Inlet, Mercer Passage, Ridley Island and North Coast (+B.C.).

A large number of abstract and bibliographic data baseses were searched. This included:

- Aquatic and Sciences Fisheries Abstracts
- B.C. Institute of Technology catalogue

- Canadian National Catalogue (AMICUS)
- EBSCO (Academic Search Complete, EBSCO Animals, GreenFile)
- Fisheries and Oceans Canada Library (WAVES)
- Fraser River Action Plan - A bibliography of scientific information on Fraser River basin environmental quality - 1994/1998
- Google Scholar (Beta)
- Harrison, P.J., Fulton, J.D., Miller, G., Levings, C.D., Taylor, F.J.R., Parsons, T.R., Thompson, P.A. and Mitchell, D.W. 1984. A bibliography of the biological oceanography of the Strait of Georgia and adjacent inlets, with emphasis on ecological aspects. Canadian Technical Report of Fisheries and Aquatic Sciences. 1293:140p.
- IEEE Xplore Digital Library
- ISI Web of Knowledge (BIOSIS, Biological Abstracts)
- National Sea Grant Library
- National Oceanic and Atmospheric Administration Information Network Catalog
- Pollution Abstracts
- Science Indexes (Applied Science and Technology Index plus, General Science Index, Biological and Agricultural Index plus)
- ScienceResearch.com (Beta)
- Scirus (Science Direct)
- Simon Fraser University library catalogue
- Theses Canada Portal
- University of British Columbia - Archives, Bibliographies, Reading Rooms
- University of British Columbia library catalogue
- University of Victoria library catalogue
- Web of Science
- Williams, G.L. 1991. Prince Rupert area coastal fish habitat bibliography. Prepared for Department of Fisheries and Oceans, Prince Rupert, B.C.
- WorldCat

Peer reviewed and non-peer reviewed articles are included within each port development category. Peer reviewed documents include journal articles, government reports, theses and conference proceedings. Non-peer reviewed references include internal government documents, consultant reports and industry reports. Since many of the non-peer reviewed documents could not be obtained or reviewed. The citations were included only if they were verified from multiple sources. Keywords are included with each reference and designated within the following symbols [ ]. These can be searched within the electronic version of document.



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## **Plankton**

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